



SECOR  
INTERNATIONAL  
INCORPORATED

[www.secotor.com](http://www.secotor.com)

290 Conejo Ridge Ave., Suite 200  
Thousand Oaks, CA 91361  
805-230-1266 TEL  
805-230-1277 FAX

December 21, 2004

Ms. Valerie Toney  
City of Los Angeles Fire Department  
Environmental Unit  
200 North Main Street  
Los Angeles, California 90012

**Subject: WELL ABANDONMENT REPORT**

ARCO Station No. 1076  
9500 De Soto Avenue  
Chatsworth, California  
Permit#: 11140  
Facility ID#: 29561

Dear Ms. Toney:

SECOR International Incorporated (SECOR), on behalf of the Atlantic Richfield Company (Atlantic Richfield), is pleased to present this *Well Abandonment Report* for ARCO Station No. 1076, located at 9500 De Soto Avenue, in Chatsworth, California (Figure 1). On March 9, 2004, the City of Los Angeles Fire Department (LAFD) issued a letter stating that "no further action is required at this time" (Appendix A). It was determined that four soil vapor extraction (SVE) wells (GTV-1 through GTV-3 and GTV-6) and four groundwater monitoring wells (GTW-2 and GTW-4 through GTW-6) installed during Site assessment activities should be abandoned.

The scope of work completed during the well abandonment consisted of the following activities:

- Obtained a well abandonment permit from the Los Angeles Department of Health Services (LADHS; Appendix B);
- Abandoned four quadruple-nested SVE wells (GTV-1 through GTV-3 and GTV-6) and four groundwater monitoring wells (GTW-2 and GTW-4 through GTW-6) by pressure grouting; and
- Prepared this technical report.

#### **SITE DESCRIPTION**

ARCO Station No. 1076 is an active retail gas station and minimart located on the northeast corner of De Soto Avenue and Plummer Street in the City of Chatsworth, California (Figures 1). The Site is situated at an elevation of approximately 900 feet above mean sea level (msl). Local topography slopes to the south at approximately 0.013 feet per foot (USGS, 1972).

For a detailed description of previous investigations, please refer to SECOR's *Request to Maintain Closure Status* report dated August 22, 2003.

## **WELL ABANDONMENT**

From October 27 through 29, 2004, SECOR abandoned four SVE wells (GTV-1 through GTV-3 and GTV-6) and three (groundwater monitoring wells GTW-4 through GTW-6) (Figure 2). Well abandonment was completed using a CME-75 drill rig equipped with 11-inch diameter hollow-stem augers provided by Cascade Drilling, Inc. of Norwalk, California (C-57 #717510). All work was directed by a qualified SECOR geologist working under the direct supervision of a State of California Registered Geologist.

Initially, the LADHS requested that all groundwater monitoring wells be destroyed by overdrilling. Historical borings logs for groundwater monitoring wells completed at the Site indicated the annular space in the blank screened interval was backfilled with cement. SECOR received verbal approval from the LADHS to pressure grout the groundwater monitoring wells if it could be confirmed that cement was used as the original backfill material.

During abandonment of GTW-4, the well was initially overdrilled (around the intact PVC well casing) to approximately 16 feet bgs at which point cement was encountered. SECOR contacted the LADHS and received verbal approval to proceed with pressure grouting of the wells.

All wells were pressure grouted to their respective total depth using a six sack per 55-gallon drum mixture of Portland Low Alkali Type I-II cement mixed with approximately five percent bentonite powder. Pressure grouting was completed by pumping cement into the individual well casings, capping the wells with a metal block equipped with pressure fitting, and applying approximately 60 pounds per square inch (psi) of pressure for approximately 10 minutes. This procedure was re-applied until no continued noticeable drop in the grout levels was observed. All wellboxes were then jackhammered out and removed, and backfilled with concrete finished flush and dyed to match the existing surface.

Table 1 summarizes the well construction and destruction details, tabulates the calculated volume of grout required to fill one casing volume, and includes the approximate volume of cement grout used to pressure grout each individual well.

## **WASTE DISPOSAL**

Soil cuttings generated during drilling activities were placed in labeled, DOT-approved 55-gallon steel drums and stored on Site. One confirmation soil sample (Drum 1) was collected from the soil drums and relinquished to Del Mar Analytical of Irvine, California (Del Mar) for chemical analysis. Del Mar is an Atlantic Richfield Company-contracted and California Department of Health Services certified laboratory. Following analytical characterization, the soil drums were removed from the Site by Belshire Environmental, Inc. and transported to TPS Technologies, Inc., in Adelanto, California, for recycling. Waste disposal documentation is presented in Appendix C. Copies of the certified laboratory analytical report and chain-of-custody documentation are included in Appendix D.

## STANDARD LIMITATIONS

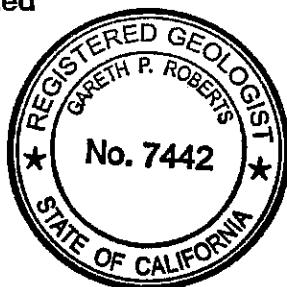
All work was performed under the supervision of a registered geologist as defined in the Registered Geologist Act of the California Code of Regulations. The information contained in this report represents SECOR's professional opinions, and is based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this Site or report, please do not hesitate to contact the undersigned at (805) 230-1266.

Sincerely,

**SECOR International Incorporated**

*Bruce Cameron*  
Michael Salisbury  
Staff Geologist



*Gareth Roberts*  
Gareth Roberts, R.G. No. 7442  
Senior Geologist  
Project Manager

Attachments: Figure 1 – Site Location Map  
Figure 2 – Site Map Showing Abandoned Well Locations  
Table 1 – Summary of Well Construction/Destruction Details  
Appendix A – LAFD Correspondence  
Appendix B – LADHS Well Abandonment Permit  
Appendix C – Waste Disposal Documentation  
Appendix D – Laboratory Analytical Reports and Chain-of-Custody Documents

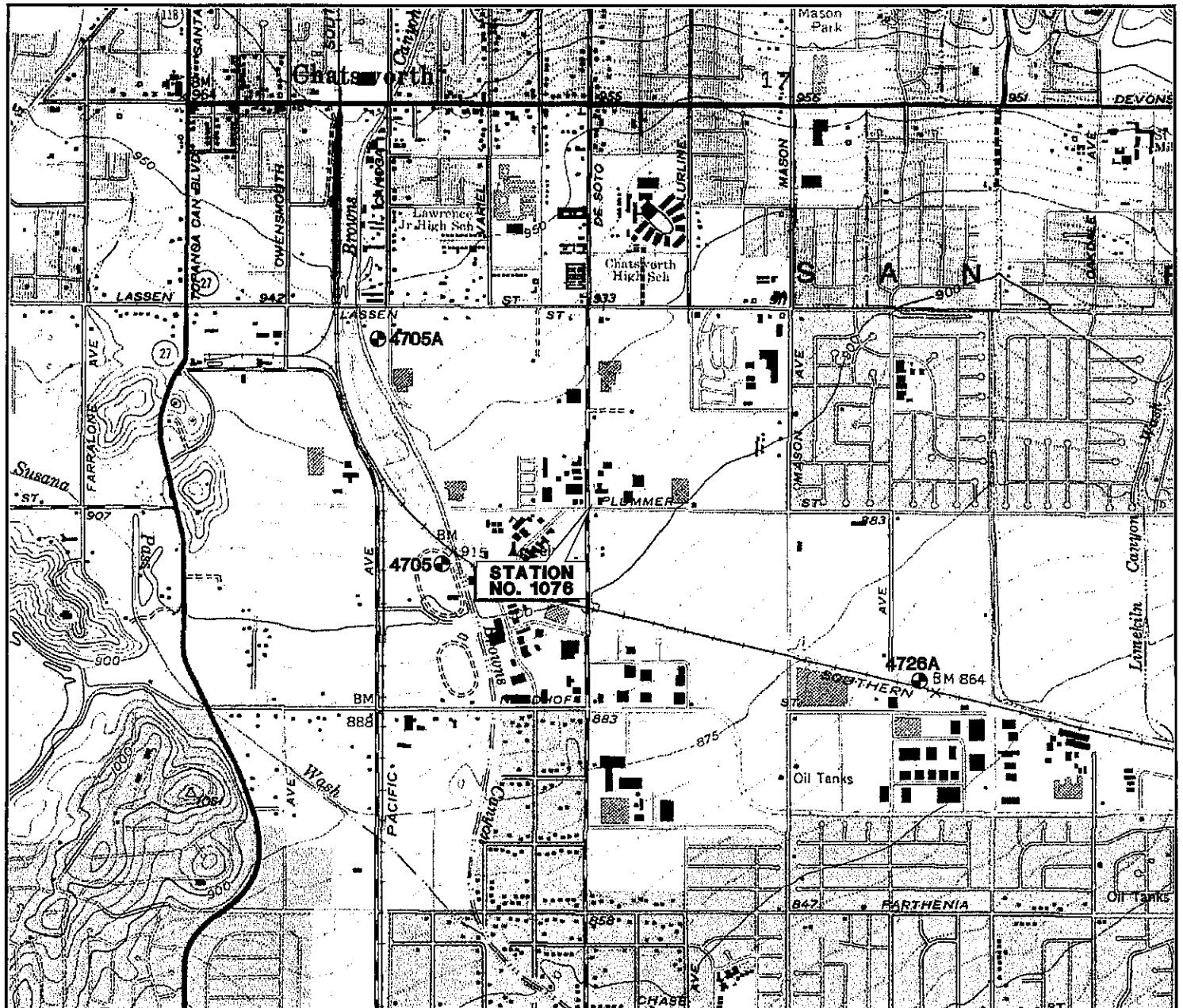
cc: Mr. Ray Vose - Atlantic Richfield Company  
LADHS – Wynsor Kawamoto, Water & Sewage/ Mountain & Rural Programs –  
Environmental Health division, 5050 Commerce Drive, Baldwin Park, CA 91706

## REFERENCES

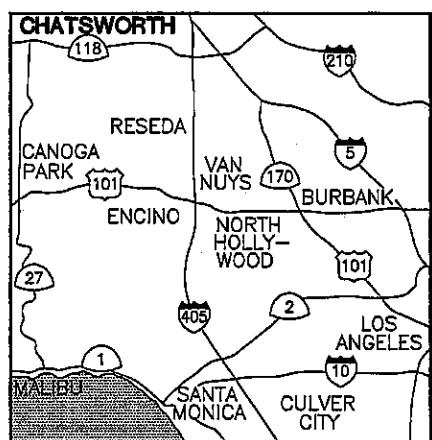
SECOR, 2003, *Request to Maintain Closure Status*, ARCO Station 1076, 9500 De Soto Avenue, Chatsworth, California, August 22.

United States Geological Survey (USGS), 1966, *Van Nuys Quadrangle*, – Los Angeles County, 7.5 minute series (topographic), photo-revised 1972: USGS, scale 1:24,000, 1 sheet.

## **FIGURES**



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, CANOGA PARK QUADRANGLE, 1952  
PHOTOREVISED 1967  
OAT MOUNTAIN QUADRANGLE, 1952  
PHOTOREVISED 1969



LEGEND

● OBSERVATION WELL

0 2000 4000  
APPROXIMATE SCALE IN FEET



SECOR  
290 Conejo Ridge Avenue, Suite 200  
Thousand Oaks, CA 91361  
(805) 230-1266/230-1277 (Fax)

PREPARED FOR:

ATLANTIC RICHFIELD COMPANY  
STATION NO. 1076  
9500 DE SOTO AVENUE  
CHATSWORTH, CALIFORNIA

SITE LOCATION MAP

FIGURE:

1

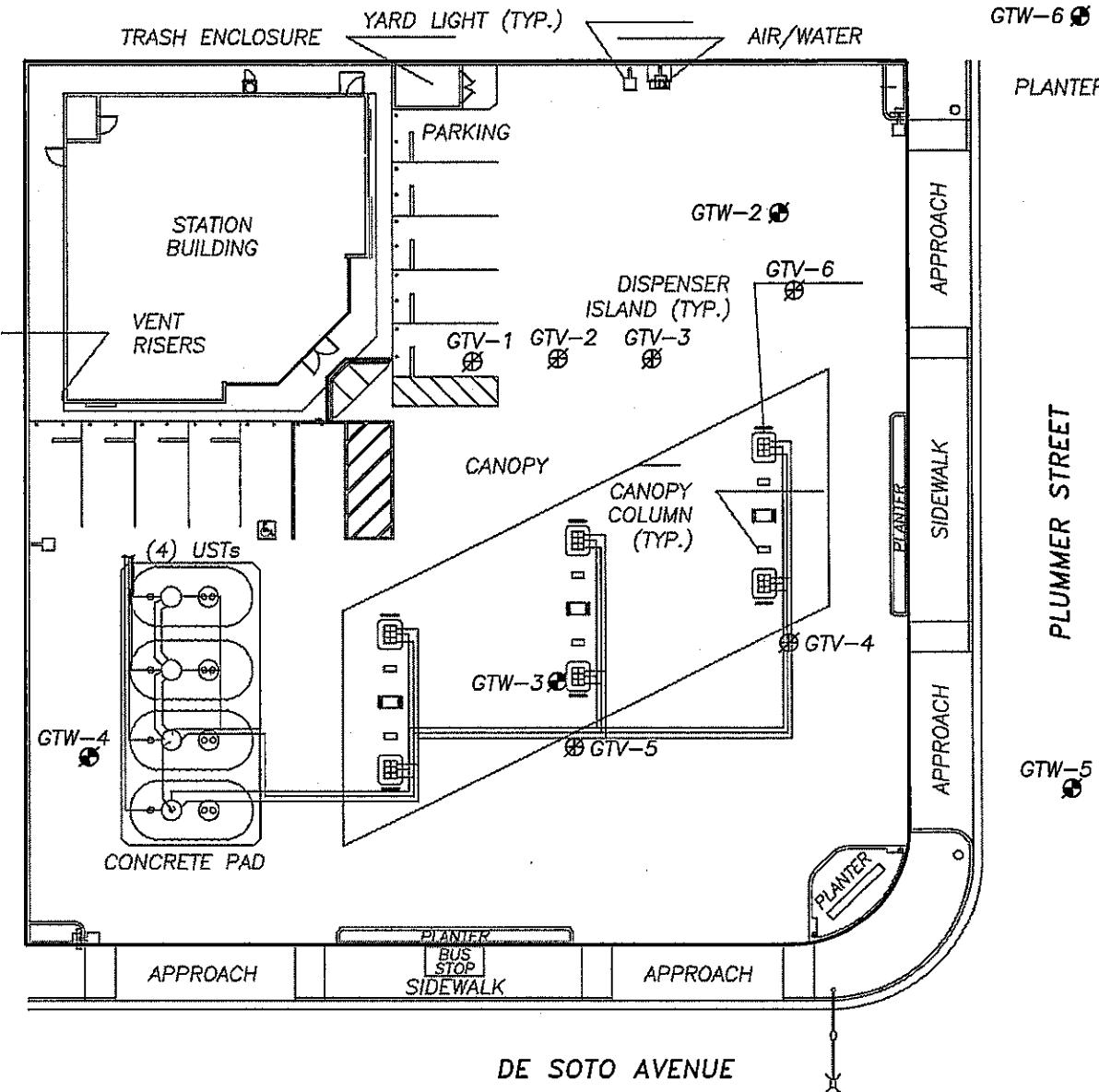
JOB NUMBER:  
37BP.01076.02/0636

DRAWN BY:  
RLE

CHECKED BY:  
M. Salisbury

APPROVED BY:  
G Roberts

DATE:  
12/07/04



#### LEGEND

SITE PROPERTY LINE  
 EXISTING 3" OVER 2" F.G. DOUBLE WALL  
 PRODUCT PIPING LOCATIONS  
 EXISTING 3" F.G. SINGLE WALL VAPOR  
 RECOVERY PIPING LOCATIONS  
 EXISTING 2" VENT PIPING LOCATIONS

GTW-3  
 ABANDONED GROUNDWATER MONITORING  
 WELL LOCATION  
 GTW-5  
 ABANDONED VAPOR EXTRACTION WELL  
 LOCATIONS

#### NOTES:

1. SOURCE OF MAP: F.F. AND ASSOCIATES, DATED OCTOBER 27, 2000.
2. SITE FEATURES AND SAMPLE LOCATIONS ARE APPROXIMATE.

0 30 60  
 APPROXIMATE SCALE IN FEET



SECOR

280 Conejo Ridge Avenue, Suite 200  
 Thousand Oaks, CA 91361  
 (805) 230-1266/230-1277 (Fax)

m:VARCO\1076 Chatsworth\Report\_12-04

PREPARED FOR:  
 ATLANTIC RICHFIELD COMPANY  
 STATION NO. 1076  
 9500 DE SOTO AVENUE  
 CHATSWORTH, CALIFORNIA

JOB NUMBER: 37BP.01076.02/0636 DRAWN BY: RLE

SITE LOCATION MAP SHOWING  
 ABANDONED WELL LOCATIONS

CHECKED BY: M. Salisbury

APPROVED BY: G Roberts

FIGURE:

2

DATE: 12/15/04  
 1076-ASM

## **TABLES**

**Table 1**  
**Summary of Well Construction/Destruction Details**  
**ARCO Station No. 1076**  
**Chatsworth, California**

Well ID. No.	Well Abandonment Date	Well Diameter (in.)	Depth (ft. bgs)	Screened Interval(s) (ft. bgs)	Calculated Grout Needed - One Casing Volume (gal)	Grout Volume Used (gallons)	Depth Overdrilled (ft bgs)
GTV1	10/28/2004	2	110	85-110	20	30	Pressure grouted
		2	80	55-80	14	24	Pressure grouted
		2	50	30-50	9	18	Pressure grouted
		2	25	5-25	5	12	Pressure grouted
GTV2	10/28/2004	2	120	80-120	22	40	Pressure grouted
		2	75	55-75	14	25	Pressure grouted
		2	51	31-51	9	20	Pressure grouted
		2	26	6-26	5	12	Pressure grouted
GTV3	10/28/2004	2	110	85-110	20	40	Pressure grouted
		2	80	55-80	14	25	Pressure grouted
		2	50	30-50	9	14	Pressure grouted
		2	25	5-25	5	9	Pressure grouted
GTV4	4/19/2001	2	40 @ 25	18.1-36.3	NA	NA	Pressure grouted
GTV5	4/19/2001	2	40 @ 20	18.8-37.6	NA	NA	Pressure grouted
GTV6	10/28/2004	2	110	75-110	20	40	Pressure grouted
GTW-2	10/27/2004	4	121.75	95-125	79	130	Pressure grouted
GTW-3	4/18/2001	4	126.85	95-130	NA	NA	130
GTW-4	10/27/2004	4	127.9	95-135	83	110	Pressure grouted
GTW-5	10/29/2004	4	127.3	90-130	83	130	Pressure grouted
GTW-6	10/29/2004	4	129.5	90-130	84	130	Pressure grouted

Notes:

Calculated Casing Volume = 0.18 gallons/foot for a 2-inch diameter casing; 0.65 gallons/foot for a 4-inch diameter casing

Volume of grout used is an approximate value

NA - Not Applicable

## **APPENDIX A**

LAFD Correspondence

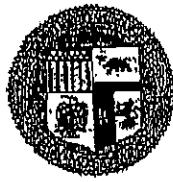
## BOARD OF FIRE COMMISSIONERS

CORINA ALARCON  
PRESIDENT

JAY H. GRODIN  
VICE PRESIDENT

ROLAND COLEMAN  
LOUISE L. FRANKEL  
TYRONE FREEMAN

BLANCA GOMEZ-REVELLES  
EXECUTIVE ASSISTANT II

CITY OF LOS ANGELES  
CALIFORNIA

JAMES K. HAHN  
MAYOR

## DEPARTMENT OF FIRE

WILLIAM R. BAMATTRE  
FIRE CHIEF

200 NORTH MAIN STREET  
LOS ANGELES, CA 90012

(213) 978-3800  
FAX: (213) 978-3816

<http://www.lafd.org>

March 9, 2004

Mr. Ray Vose,  
Atlantic Richfield Company  
P.O. Box 6038  
Artesia, California 90702-6038

Facility ID #: 29561

SITE: Arco Station No 1076.  
9500 De Soto Avenue  
Chatsworth, California  
RE: Permit #: 11140

Dear Mr. Vose:

The Fire Department has reviewed the Request to Maintain Closure Status dated August 22, 2003, prepared by Secor International, Inc.

Based on the information provided to date, this Department has determined that no further action is required at this time.

Please note that this correspondence does not exempt you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at this site. Additionally, you maintain the responsibility to correct additional or previously unidentified conditions at the site which could cause pollution or nuisance, or otherwise pose a threat to water quality or public health.

If you require additional information from the Los Angeles Fire Department, please contact Ms. Valerie Toney, Manager, Hazardous Materials Programs Unit, at 213-978-3684.

Very truly yours,

WILLIAM R. BAMATTRE  
Fire Chief

*Frank K. Comfort*

Frank K. Comfort, Captain I  
Commander, Environmental Unit

cc: Andrew Modugno, Secor International Inc, 290 Conejo Ridge Ave., Suite 200, Thousand Oaks, CA 91361

AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

**APPENDIX B**

LADHS Well Abandonment Permit

## WELL PERMIT APPLICATION

## NON-PRODUCTION WELLS

WATER & SEWAGE / MOUNTAIN & RURAL PROGRAMS - ENVIRONMENTAL HEALTH DIVISION  
5050 COMMERCE DRIVE, BALDWIN PARK, CA 91706 (626) 430-5380 FAX (626) 813-3016

DATE:

<input type="checkbox"/> NEW WELL CONSTRUCTION	<input checked="" type="checkbox"/> MONITORING	<input type="checkbox"/> HEAT EXCHANGE
<input type="checkbox"/> RECONSTRUCTION OR RENOVATION	<input type="checkbox"/> CATHODIC	<input type="checkbox"/> OTHER (Specify):
<input type="checkbox"/> DECOMMISSIONING	<input type="checkbox"/> INJECTION	
<input checked="" type="checkbox"/> OTHER: <i>Destruction</i>	<input type="checkbox"/> EXTRACTION	

SITE ADDRESS <sup>14</sup>	CITY <i>Chatsworth, CA</i>			ZIP CODE <i>91311-5010</i>
Township <i>2 North</i>	Range <i>16 West</i>	Section <i>19</i>	Map Book Page/Grid <i>Thomas Guide p.500 C-6</i>	
NO. OF WELLS IN EACH PARCEL: <i>4</i> (GTR-2, GTR-4, GTR-5, GTR-6) Attach site map with well locations				

WELL STRUCTURE	Type and Size of Production Casing	<i>SECOR International</i>		CONTINUE
	Sanitary / Absorbent Sealing Material	<i>Michael Salisbury</i>		
	Depth of Sanitary / Absorbent Seal	<i>290 Conejo Ridge Road</i>		
	Conductor Casing Seal	<i>Thousand Oaks, CA 91361</i>		
Telephone <i>(805) 230 1266 office (805) 901 6453</i>				

OWNER/DRILLER INFORMATION	Well Owner	<i>ARCO</i>		
	Address	<i>4 Centerpointe Drive</i>		
	City / Zip Code	<i>La Palma, CA 90623-1066</i>		
	Telephone	<i>RAY VASE: 818 957-1755</i>		
	Well Driller			
	Address			
City / Zip Code				
C-57 License No.				
Telephone				

WELL DRILLING/REWORKING	Well Depth log / records	<i>130 ft bgs</i>		
	Method of Well Assessment	<i>Well completion log</i>		
	Depth and Number of Perforations	<i>1 perforation / well 95-130 ft bgs</i>		
	Type of Perforator Size of Perforations	<i>#4" PVC 0.02 slot size</i>		
	Type and Amount of Sealant	<i>bentonite grout</i>		
	Method of Upper Seal Premix Application	<i>over drill up to 10 feet backfill by premix grout to depth</i>		

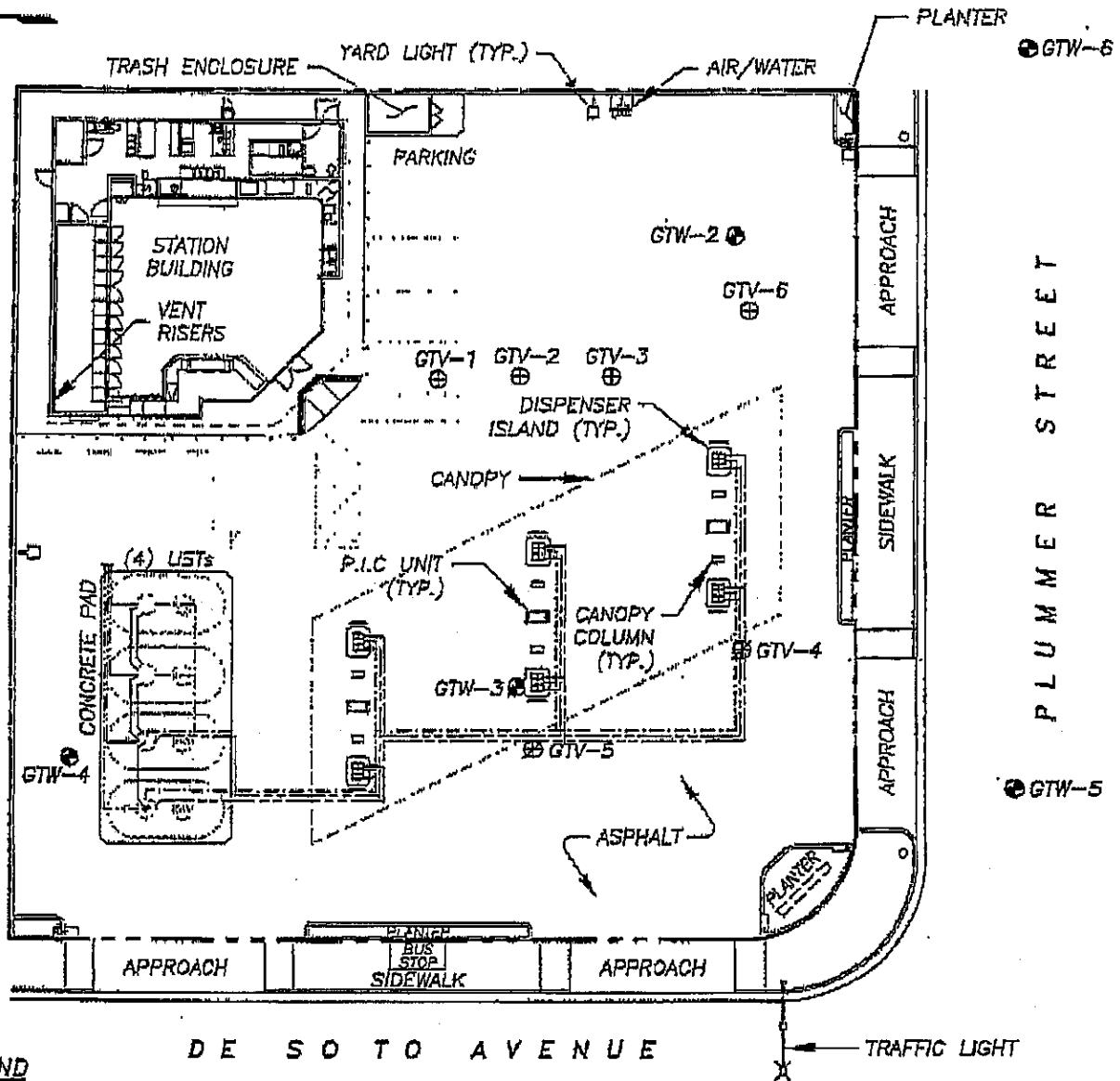
I hereby agree to comply in every respect with all the regulations of the County Environmental Health Division and with all ordinances and laws of the County of Los Angeles and the State of California pertaining to well construction, reconstruction and decommissioning. Upon completion of the well and within thirty days thereafter, I will furnish the Environmental Health office with a completion log of the well giving date drilled, depth of the well, perforations in the casing and any other data deemed necessary by County Environmental Health Division.

Applicant's Signature

Applicant Name (PRINT) *Michael Salisbury*  
Telephone *(805) 901 6453* *(805) 230 1266*

761-029-4  
H-12 (Rev. 01/2001)

IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED IN THE FIELD ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THIS OFFICE, WORK PLAN MODIFICATIONS MAY BE REQUIRED		
DISPOSITION OF PERMIT (Department Use Only) THIS PERMIT IS CONSIDERED COMPLETE WHEN THE WORK PLAN IS APPROVED AND WHEN THE WELL COMPLETION LOG IS RECEIVED. NO WELL CONSTRUCTION OR DECOMMISSIONING CAN BE INITIATED WITHOUT THE WORK PLAN APPROVAL FROM THIS DEPARTMENT.		
WORK PLAN APPROVAL <i>This Approval is Valid for 180 Days</i>		
Date <i>10-22-04</i>	REHS	<i>Michael J. L.</i>
Conditions <i>APPROVAL IS CONTINGENT UPON THE FOLLOWING:</i>		
<i>OVERDRILL THE WELLS TO TOTAL DEPTH, REMOVE THE COMPONENTS OF THE WELL AND BACKFILL (VIA TREMIE PIPE, BOTTOM OF BOREHOLE UPWARDS) WITH NEAT CEMENT. THE WATER-CEMENT RATIO BY WEIGHT FOR THE SEALING MATERIAL SHALL BE 0.50. (UP TO 5% BENTONITE BY WEIGHT MAY BE USED W/ NEAT CEMENT @ 1 GALLON OF WATER TO 2 POUNDS OF BENTONITE).</i>		
<i>PLEASE NOTIFY THE DEPT A MIN. OF TWO BUSINESS DAYS PRIOR TO DRILLING FOR A FINAL INSPECTION.</i>		
Date	REHS	
PERMIT ISSUED <i>The well log must be submitted to the department prior to final approval.</i>		
Date	REHS	



#### LEGEND

- SITE PROPERTY LINE
- 3" OVER 2" F.G. DOUBLE WALL PRODUCT PIPING LOCATIONS
- 3" F.G. SINGLE WALL VAPOR RECOVERY PIPING LOCATIONS
- 2" VENT PIPING LOCATIONS
- GROUNDWATER MONITORING WELL LOCATIONS
- GTV-4
- GTV-1
- GTV-3
- GTV-5
- VAPOR EXTRACTION WELL LOCATIONS
- ABANDONED GROUNDWATER MONITORING WELL LOCATION
- ABANDONED VAPOR EXTRACTION WELL LOCATIONS

#### NOTES:

1. SOURCE OF MAP: F.F. AND ASSOCIATES, DATED OCTOBER 27, 2000.
2. NOT A SURVEYED MAP. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30 60  
APPROXIMATE SCALE IN FEET

**SECOR**

International Incorporated

**SITE MAP**

CLIENT NAME: ATLANTIC RICHFIELD COMPANY STATION NO. 1076	PROJECT NUMBER: 37BP.01076.01	DRAWING DATE: 7/1/03	REVISION NO.:
SITE ADDRESS: 9500 DE SOTO AVENUE CHATSWORTH, CALIFORNIA	DRAFTED BY: RAR	CAD FILE: 1076-Q2GW03ISO	FIGURE: <b>2</b>

TOTAL P.03

## **APPENDIX C**

### **Waste Disposal Documentation**

## TPS Technologies Soil Recycling

Manifest

Non-Hazardous Soils

Used Manifest

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #:		
11/12/2004	REST	118-73	03	23890	1001		
Generator's Name and Billing Address: <b>BP WEST COAST PRODUCTS LLC</b> P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688			Generator's Phone #:	Generator's US EPA ID No.			
			Person to Contact:				
			FAX#:	Customer Account Number with TPS:			
Consultant's Name and Billing Address:			Consultant's Phone #:				
			Person to Contact:				
			FAX#:	Customer Account Number with TPS:			
Generation Site (Transport from): (name & address) <b>ARCO #1076</b> 9500 DE SOTO AVE CHATSWORTH, CA 91311			Site Phone #:	BTX Levels			
			Person to Contact:	TPH Levels			
			FAX#:	AVG. Levels			
Designated Facility (Transport to): (name & address) <b>TPS TECHNOLOGIES, INC.</b> 12328 HIBISCUS AVENUE ADELANTO, CA 92301			Facility Phone #: <b>800-862-8001</b>	Facility Permit Numbers			
			Person to Contact:				
			FAX#: <b>760-245-8004</b>				
Transporter Name and Mailing Address: <b>BELSHIRE ENVIRONMENTAL</b> 25971 TOWNE CENTRE DRIVE LAKE FOREST, CA 92610			Transporter's Phone #: <b>949-460-5200</b>	Transporter's US EPA ID No.: <b>CAD983594681</b>			
			Person to Contact: <b>Larry Mosthart</b>	Transporter's DOT No.: <b>450547</b>			
			FAX#: <b>949-460-5210</b>	Customer Account Number with TPS: <b>1000193</b>			
Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>	2 Adms		15580	7480	8100
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>					4.05
List any exception to items listed above: <b>113902</b>							
Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.							
Print or Type Name: <b>Larry Mosthart REST on behalf of BP</b>				Signature and date:	Month	Day	Year
					11	7	04
Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.							
Print or Type Name: <b>Ed Rane REST on behalf of BP</b>				Signature and date:	Month	Day	Year
				<b>11/12/2004</b>	11	12	04
Discrepancies: <b>FAC# B1076 ID# 20794</b>							
Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:							
Print or Type Name:				Signature and date:	<b>11-11-04</b>		
Please print or type							

TRANSPORTER COPY

NO. 643346

## NON-HAZARDOUS WASTE DATA FORM

<u>SITE</u>		EPA I.D. NO.			
<u>NAME</u>	BP WEST COAST PRODUCTS LLC ARCO #1076				
<u>ADDRESS</u>	P.O. BOX 86249 9560 DE SOTO AVE				
<u>CITY, STATE, ZIP</u>	RANCHO SANTA MARGARITA, CA 92688 CHATSWORTH, CA 91311				
<u>CONTAINERS:</u> No.	<u>VOLUME</u>	<u>GALLONS</u>			
5 275					
<u>TYPE:</u>	<input checked="" type="checkbox"/> TANK <input type="checkbox"/> DUMP TRUCK <input checked="" type="checkbox"/> DRUMS <input type="checkbox"/> CARTONS <input type="checkbox"/> OTHER				
<u>NON-HAZARDOUS WATER</u> COMPONENTS OF WASTE		<u>WELL PURGING/DECON WATER</u> GENERATING PROCESS COMPONENTS OF WASTE			
1. <u>WATER</u>	<u>PPM</u>	<u>%</u>			
2. <u>TPH</u>	<u>&lt;1%</u>				
3.					
4.					
<u>PROPERTIES:</u>	<u>pH - 10</u> <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> SLUDGE <input type="checkbox"/> SLURRY <input type="checkbox"/> OTHER				
<u>HANDLING INSTRUCTIONS:</u> WEAR ALL APPROPRIATE PROTECTIVE CLOTHING					
<u>THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.</u>		<u>Larry Moothart BEST for ARCO</u>			
		<u>11-01-01</u>			
<u>NAME</u>	Belshire Environmental Services, Inc. Nieto and Sons				
<u>ADDRESS</u>	25971 Towne Centre Drive 1281 Brea Canyon Road				
<u>CITY, STATE, ZIP</u>	Lake Forest, CA 92610 Brea, CA 92821				
<u>PHONE NO.</u>	949-460-5200 (714) 990-6255				
<u>TRUCK, UNIT, I.D. NO.</u>	<u>TYPED OR PRINTED FULL NAME &amp; SIGNATURE</u>				
<u>NAME</u>	Steve Nieto				
<u>ADDRESS</u>	2000 N. Alameda St.				
<u>CITY, STATE, ZIP</u>	Compton, CA 90222				
<u>PHONE NO.</u>	310-537-7100				
<u>TYPED OR PRINTED FULL NAME &amp; SIGNATURE</u>					
<u>DISPOSAL METHOD</u>	<input type="checkbox"/> LANDFILL <input checked="" type="checkbox"/> OTHER				
<u>RECYCLER</u>					
<u>GEN</u>	<u>OLD/NEW</u>	<u>L</u>	<u>A</u>	<u>TONS</u>	
<u>TRANS</u>		<u>S</u>	<u>B</u>		
<u>O/D</u>		<u>R/HG</u>		<u>HWDF</u>	<u>NONE</u>
				<u>DISCREPANCY</u>	

## **APPENDIX D**

Laboratory Analytical Reports and Chain-of-Custody Documentation



# Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
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## LABORATORY REPORT

Prepared For: SECOR International, Inc.-Thousand Oaks  
290 Conejo Ridge Avenue, Suite 200  
Thousand Oaks, CA 91361  
Attention: Gareth Roberts

Project: ARCO 1076, Chatsworth

Sampled: 10/28/04  
Received: 10/28/04  
Issued: 11/05/04 14:59

NELAP #01108CA CA ELAP #1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.*  
*This entire report was reviewed and approved for release.*

### CASE NARRATIVE

- SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
- PRESERVATION: Samples requiring preservation were verified prior to sample analysis. Results were qualified where the sample container did not meet the method preservation requirements.
- QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
- COMMENTS: Results that fall between the MDL and RL are 'J' flagged.
- SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
INJ2033-01	Drum 1	Soil
INJ2033-03	TB-1076-20041028	Water

Reviewed By:

Del Mar Analytical, Irvine  
Wendy Kirkeeng For Chris Roberts  
Project Manager



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Project ID: ARCO 1076, Chatsworth

Report Number: INJ2033

Sampled: 10/28/04  
Received: 10/28/04

## VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: INJ2033-03 (TB-1076-20041028 - Water)</b>									
Reporting Units: ug/l									
GRO (C4 - C12)	EPA 8015B	4J30026	22	50	ND	1	10/30/04	10/30/04	MB
Surrogate: 4-BFB (FID) (60-135%)									

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Received: 10/28/04

### VOLATILE FUEL HYDROCARBONS (EPA 5035B/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: INJ2033-01 (Drum 1 - Soil)</b>									
Reporting Units: mg/kg									
GRO (C4 - C12)	EPA 8015B	4J29026	0.12	0.90	0.87	0.901	10/29/04	10/30/04	J,DX
<i>Surrogate: 4-BFB (FID) (65-135%)</i>									
<i>128 %</i>									

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### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: INJ2033-03 (TB-1076-20041028 - Water)</b>									PC
Reporting Units: ug/l									
Benzene	EPA 8260B	4K01004	0.28	2.0	ND	1	11/01/04	11/01/04	
Ethylbenzene	EPA 8260B	4K01004	0.25	2.0	ND	1	11/01/04	11/01/04	
Toluene	EPA 8260B	4K01004	0.36	2.0	0.42	1	11/01/04	11/01/04	J,DX
m,p-Xylenes	EPA 8260B	4K01004	0.52	2.0	ND	1	11/01/04	11/01/04	
o-Xylene	EPA 8260B	4K01004	0.24	2.0	ND	1	11/01/04	11/01/04	
Xylenes, Total	EPA 8260B	4K01004	0.52	4.0	ND	1	11/01/04	11/01/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K01004	0.25	5.0	ND	1	11/01/04	11/01/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K01004	0.28	5.0	ND	1	11/01/04	11/01/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K01004	0.33	5.0	ND	1	11/01/04	11/01/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K01004	0.32	5.0	ND	1	11/01/04	11/01/04	
tert-Butanol (TBA)	EPA 8260B	4K01004	3.1	50	ND	1	11/01/04	11/01/04	
Ethanol	EPA 8260B	4K01004	100	150	ND	1	11/01/04	11/01/04	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>									95 %
<i>Surrogate: Toluene-d8 (80-120%)</i>									99 %
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>									99 %

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 Project Manager

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Report Number: INJ2033

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 Received: 10/28/04

### BTEX/OXYGENATES by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: INJ2033-01 (Drum 1 - Soil)</b>									
Reporting Units: mg/kg									
Benzene	EPA 8260B	4J30013	0.00045	0.0018	ND	0.903	10/29/04	10/30/04	
Ethylbenzene	EPA 8260B	4J30013	0.00046	0.0018	0.0095	0.903	10/29/04	10/30/04	
Toluene	EPA 8260B	4J30013	0.00082	0.0018	0.025	0.903	10/29/04	10/30/04	
o-Xylene	EPA 8260B	4J30013	0.00042	0.0018	0.012	0.903	10/29/04	10/30/04	
m,p-Xylenes	EPA 8260B	4J30013	0.00068	0.0018	0.033	0.903	10/29/04	10/30/04	
Xylenes, Total	EPA 8260B	4J30013	0.00068	0.0036	0.045	0.903	10/29/04	10/30/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4J30013	0.00032	0.0045	ND	0.903	10/29/04	10/30/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4J30013	0.00052	0.0045	ND	0.903	10/29/04	10/30/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4J30013	0.00058	0.0045	ND	0.903	10/29/04	10/30/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4J30013	0.00090	0.0045	ND	0.903	10/29/04	10/30/04	
tert-Butanol (TBA)	EPA 8260B	4J30013	0.0042	0.045	ND	0.903	10/29/04	10/30/04	
Ethanol	EPA 8260B	4J30013	0.050	0.27	ND	0.903	10/29/04	10/30/04	
<i>Surrogate: Dibromofluoromethane (80-125%)</i>									
97 %									
<i>Surrogate: Toluene-d8 (80-120%)</i>									
98 %									
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>									
94 %									

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### METHOD BLANK/QC DATA

### VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 4J30026 Extracted: 10/30/04</b>											
<b>Blank Analyzed: 10/30/04 (4J30026-BLK1)</b>											
GRO (C4 - C12)	48.2	50	22	ug/l							J,DX
<i>Surrogate: 4-BFB (FID)</i>	<i>10.3</i>			<i>ug/l</i>	<i>10.0</i>		<i>103</i>	<i>60-135</i>			
<b>LCS Analyzed: 10/30/04 (4J30026-BS1)</b>											
GRO (C4 - C12)	248	50	22	ug/l	220		113	70-135			
<i>Surrogate: 4-BFB (FID)</i>	<i>11.4</i>			<i>ug/l</i>	<i>10.0</i>		<i>114</i>	<i>60-135</i>			
<b>Matrix Spike Analyzed: 10/30/04 (4J30026-MS1)</b>											
GRO (C4 - C12)	3540	250	110	ug/l	1100	2800	67	60-135			
<i>Surrogate: 4-BFB (FID)</i>	<i>54.2</i>			<i>ug/l</i>	<i>50.0</i>		<i>108</i>	<i>60-135</i>			
<b>Matrix Spike Dup Analyzed: 10/30/04 (4J30026-MSD1)</b>											
GRO (C4 - C12)	3640	250	110	ug/l	1100	2800	76	60-135	3	20	
<i>Surrogate: 4-BFB (FID)</i>	<i>52.0</i>			<i>ug/l</i>	<i>50.0</i>		<i>104</i>	<i>60-135</i>			

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 Received: 10/28/04

**METHOD BLANK/QC DATA**

**VOLATILE FUEL HYDROCARBONS (EPA 5035B/CADHS Mod. 8015)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 4J29026 Extracted: 10/29/04</b>											
<b>Blank Analyzed: 10/29/04 (4J29026-BLK1)</b>											
GRO (C4 - C12)	ND	1.0	0.13	mg/kg							
<i>Surrogate: 4-BFB (FID)</i>	0.0201			mg/kg	0.0200			100	65-135		
<b>LCS Analyzed: 10/29/04 (4J29026-BS1)</b>											
GRO (C4 - C12)	1.02	1.0	0.13	mg/kg	0.880			116	75-130		DU
<i>Surrogate: 4-BFB (FID)</i>	0.0216			mg/kg	0.0200			108	65-135		
<b>LCS Dup Analyzed: 10/29/04 (4J29026-BSD1)</b>											
GRO (C4 - C12)	1.00	1.0	0.13	mg/kg	0.880			114	75-130	2	20
<i>Surrogate: 4-BFB (FID)</i>	0.0211			mg/kg	0.0200			106	65-135		

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### METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 4K01004 Extracted: 11/01/04

**Blank Analyzed: 11/01/04 (4K01004-BLK1)**

Benzene	ND	2.0	0.28	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Toluene	ND	2.0	0.36	ug/l							
m,p-Xylenes	ND	2.0	0.52	ug/l							
o-Xylene	ND	2.0	0.24	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	0.28	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	0.33	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l							
tert-Butanol (TBA)	ND	50	3.1	ug/l							
Ethanol	ND	150	100	ug/l							
<i>Surrogate: Dibromofluoromethane</i>	23.8			ug/l	25.0		95	80-120			
<i>Surrogate: Toluene-d8</i>	25.2			ug/l	25.0		101	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.5			ug/l	25.0		94	80-120			

**LCS Analyzed: 11/01/04 (4K01004-BSI)**

Benzene	23.0	2.0	0.28	ug/l	25.0		92	70-120			
Ethylbenzene	23.0	2.0	0.25	ug/l	25.0		92	80-120			
Toluene	22.2	2.0	0.36	ug/l	25.0		89	75-120			
m,p-Xylenes	44.7	2.0	0.52	ug/l	50.0		89	75-120			
o-Xylene	22.2	2.0	0.24	ug/l	25.0		89	75-125			
Xylenes, Total	66.9	4.0	0.52	ug/l	75.0		89	75-125			
Di-isopropyl Ether (DIPE)	23.5	5.0	0.25	ug/l	25.0		94	65-135			
Ethyl tert-Butyl Ether (ETBE)	23.5	5.0	0.28	ug/l	25.0		94	60-140			
tert-Amyl Methyl Ether (TAME)	24.2	5.0	0.33	ug/l	25.0		97	60-140			
Methyl-tert-butyl Ether (MTBE)	25.8	5.0	0.32	ug/l	25.0		103	55-145			
tert-Butanol (TBA)	113	50	3.1	ug/l	125		90	70-140			
Ethanol	190	150	100	ug/l	250		76	35-165			
<i>Surrogate: Dibromofluoromethane</i>	24.7			ug/l	25.0		99	80-120			
<i>Surrogate: Toluene-d8</i>	25.4			ug/l	25.0		102	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	25.0			ug/l	25.0		100	80-120			

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### METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
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Batch: 4K01004 Extracted: 11/01/04

**Matrix Spike Analyzed: 11/01/04 (4K01004-MS1)**

						Source: INJ2008-07				BZ
Benzene	216	20	2.8	ug/l	250	ND	86	70-120		
Ethylbenzene	323	20	2.5	ug/l	250	40	113	70-130		
Toluene	272	20	3.6	ug/l	250	50	89	70-120		
m,p-Xylenes	565	20	5.2	ug/l	500	15	110	65-130		
o-Xylene	287	20	2.4	ug/l	250	20	107	65-125		
Xylenes, Total	852	40	5.2	ug/l	750	35	109	65-135		
Di-isopropyl Ether (DIPE)	220	50	2.5	ug/l	250	ND	88	65-140		
Ethyl tert-Butyl Ether (ETBE)	211	50	2.8	ug/l	250	ND	84	60-140		
tert-Amyl Methyl Ether (TAME)	219	50	3.3	ug/l	250	ND	88	55-145		
Methyl-tert-butyl Ether (MTBE)	226	50	3.2	ug/l	250	ND	90	50-155		
tert-Butanol (TBA)	1860	500	31	ug/l	1250	ND	149	65-145		LM,AY
Ethanol	1430	1500	1000	ug/l	2500	ND	57	35-165		J,DX
<i>Surrogate: Dibromofluoromethane</i>	238			ug/l	250		95	80-120		
<i>Surrogate: Toluene-d8</i>	260			ug/l	250		104	80-120		
<i>Surrogate: 4-Bromofluorobenzene</i>	296			ug/l	250		118	80-120		

**Matrix Spike Dup Analyzed: 11/01/04 (4K01004-MSD1)**

						Source: INJ2008-07				BZ
Benzene	222	20	2.8	ug/l	250	ND	89	70-120	3	20
Ethylbenzene	340	20	2.5	ug/l	250	40	120	70-130	5	20
Toluene	269	20	3.6	ug/l	250	50	88	70-120	1	20
m,p-Xylenes	598	20	5.2	ug/l	500	15	117	65-130	6	25
o-Xylene	307	20	2.4	ug/l	250	20	115	65-125	7	20
Xylenes, Total	905	40	5.2	ug/l	750	35	116	65-135	6	20
Di-isopropyl Ether (DIPE)	202	50	2.5	ug/l	250	ND	81	65-140	9	25
Ethyl tert-Butyl Ether (ETBE)	234	50	2.8	ug/l	250	ND	94	60-140	10	25
tert-Amyl Methyl Ether (TAME)	248	50	3.3	ug/l	250	ND	99	55-145	12	30
Methyl-tert-butyl Ether (MTBE)	264	50	3.2	ug/l	250	ND	106	50-155	16	25
tert-Butanol (TBA)	1640	500	31	ug/l	1250	ND	131	65-145	13	25
Ethanol	1690	1500	1000	ug/l	2500	ND	68	35-165	17	30
<i>Surrogate: Dibromofluoromethane</i>	235			ug/l	250		94	80-120		
<i>Surrogate: Toluene-d8</i>	254			ug/l	250		102	80-120		
<i>Surrogate: 4-Bromofluorobenzene</i>	318			ug/l	250		127	80-120		LH,AY

**Del Mar Analytical, Irvine**  
 Wendy Kirkeeng For Chris Roberts  
 Project Manager

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SECOR International, Inc.-Thousand Oaks  
 290 Conejo Ridge Avenue, Suite 200  
 Thousand Oaks, CA 91361  
 Attention: Gareth Roberts

Project ID: ARCO 1076, Chatsworth  
 Report Number: INJ2033

Sampled: 10/28/04  
 Received: 10/28/04

### METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 5035/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<u>Batch: 4J30013 Extracted: 10/29/04</u>											
<b>Blank Analyzed: 10/29/04 (4J30013-BLK1)</b>											
Benzene	ND	0.0020	0.00050	mg/kg							
Ethylbenzene	ND	0.0020	0.00051	mg/kg							
Toluene	ND	0.0020	0.00091	mg/kg							
o-Xylene	ND	0.0020	0.00047	mg/kg							
m,p-Xylenes	ND	0.0020	0.00075	mg/kg							
Xylenes, Total	ND	0.0040	0.00075	mg/kg							
Di-isopropyl Ether (DIPE)	ND	0.0050	0.00035	mg/kg							
Ethyl tert-Butyl Ether (ETBE)	ND	0.0050	0.00058	mg/kg							
tert-Amyl Methyl Ether (TAME)	ND	0.0050	0.00064	mg/kg							
Methyl-tert-butyl Ether (MTBE)	ND	0.0050	0.0010	mg/kg							
tert-Butanol (TBA)	ND	0.050	0.0047	mg/kg							
Ethanol	ND	0.30	0.055	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	0.0504			mg/kg	0.0500			101	80-125		
<i>Surrogate: Toluene-d8</i>	0.0497			mg/kg	0.0500			99	80-120		
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0491			mg/kg	0.0500			98	80-120		
<b>LCS Analyzed: 10/29/04 (4J30013-BS1)</b>											
Benzene	0.0416	0.0020	0.00050	mg/kg	0.0500			83	70-120		
Ethylbenzene	0.0445	0.0020	0.00051	mg/kg	0.0500			89	75-125		
Toluene	0.0438	0.0020	0.00091	mg/kg	0.0500			88	75-120		
o-Xylene	0.0409	0.0020	0.00047	mg/kg	0.0500			82	80-125		
m,p-Xylenes	0.0848	0.0020	0.00075	mg/kg	0.100			85	80-125		
Xylenes, Total	0.126	0.0040	0.00075	mg/kg	0.150			84	80-125		
Di-isopropyl Ether (DIPE)	0.0423	0.0050	0.00035	mg/kg	0.0500			85	65-135		
Ethyl tert-Butyl Ether (ETBE)	0.0447	0.0050	0.00058	mg/kg	0.0500			89	60-140		
tert-Amyl Methyl Ether (TAME)	0.0439	0.0050	0.00064	mg/kg	0.0500			88	60-140		
Methyl-tert-butyl Ether (MTBE)	0.0486	0.0050	0.0010	mg/kg	0.0500			97	55-145		
tert-Butanol (TBA)	0.250	0.050	0.0047	mg/kg	0.250			100	70-140		
Ethanol	0.416	0.30	0.055	mg/kg	0.500			83	35-165		
<i>Surrogate: Dibromofluoromethane</i>	0.0495			mg/kg	0.0500			99	80-125		
<i>Surrogate: Toluene-d8</i>	0.0499			mg/kg	0.0500			100	80-120		
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0486			mg/kg	0.0500			97	80-120		

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 Project Manager

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SECOR International, Inc.-Thousand Oaks  
 290 Conejo Ridge Avenue, Suite 200  
 Thousand Oaks, CA 91361  
 Attention: Gareth Roberts

Project ID: ARCO 1076, Chatsworth

Report Number: INJ2033

Sampled: 10/28/04  
 Received: 10/28/04

### METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 5035/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
---------	--------	-----------------	-----	-------	-------------	---------------	------	-------------	---------	-----------	-----------------

Batch: 4J30013 Extracted: 10/29/04

#### Matrix Spike Analyzed: 10/29/04 (4J30013-MS1)

							Source: INJ1701-43		
Benzene	0.0442	0.0020	0.00050	mg/kg	0.0509	ND	87	65-130	
Ethylbenzene	0.0473	0.0020	0.00051	mg/kg	0.0509	ND	93	70-135	
Toluene	0.0465	0.0020	0.00091	mg/kg	0.0509	ND	91	70-125	
o-Xylene	0.0437	0.0020	0.00047	mg/kg	0.0509	ND	86	70-125	
m,p-Xylenes	0.0899	0.0020	0.00075	mg/kg	0.102	ND	88	70-130	
Xylenes, Total	0.134	0.0040	0.00075	mg/kg	0.153	ND	88	70-130	
Di-isopropyl Ether (DIPE)	0.0452	0.0050	0.00035	mg/kg	0.0509	ND	89	65-145	
Ethyl tert-Butyl Ether (ETBE)	0.0477	0.0050	0.00058	mg/kg	0.0509	ND	94	60-145	
tert-Amyl Methyl Ether (TAME)	0.0471	0.0050	0.00064	mg/kg	0.0509	ND	93	60-150	
Methyl-tert-butyl Ether (MTBE)	0.0524	0.0050	0.0010	mg/kg	0.0509	ND	103	50-155	
tert-Butanol (TBA)	0.283	0.050	0.0047	mg/kg	0.255	ND	111	65-145	
Ethanol	0.451	0.30	0.055	mg/kg	0.509	ND	89	30-165	
<i>Surrogate: Dibromoformomethane</i>	0.0509			mg/kg	0.0509		100	80-125	
<i>Surrogate: Toluene-d8</i>	0.0513			mg/kg	0.0509		101	80-120	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0501			mg/kg	0.0509		98	80-120	

#### Matrix Spike Dup Analyzed: 10/29/04 (4J30013-MSD1)

							Source: INJ1701-43		
Benzene	0.0391	0.0020	0.00050	mg/kg	0.0465	ND	84	65-130	12
Ethylbenzene	0.0434	0.0020	0.00051	mg/kg	0.0465	ND	93	70-135	9
Toluene	0.0416	0.0020	0.00091	mg/kg	0.0465	ND	89	70-125	11
o-Xylene	0.0396	0.0020	0.00047	mg/kg	0.0465	ND	85	70-125	10
m,p-Xylenes	0.0832	0.0020	0.00075	mg/kg	0.0929	ND	90	70-130	8
Xylenes, Total	0.123	0.0040	0.00075	mg/kg	0.139	ND	88	70-130	9
Di-isopropyl Ether (DIPE)	0.0375	0.0050	0.00035	mg/kg	0.0465	ND	81	65-145	19
Ethyl tert-Butyl Ether (ETBE)	0.0376	0.0050	0.00058	mg/kg	0.0465	ND	81	60-145	24
tert-Amyl Methyl Ether (TAME)	0.0353	0.0050	0.00064	mg/kg	0.0465	ND	76	60-150	29
Methyl-tert-butyl Ether (MTBE)	0.0375	0.0050	0.0010	mg/kg	0.0465	ND	81	50-155	33
tert-Butanol (TBA)	0.269	0.050	0.0047	mg/kg	0.232	ND	116	65-145	5
Ethanol	0.276	0.30	0.055	mg/kg	0.465	ND	59	30-165	48
<i>Surrogate: Dibromoformomethane</i>	0.0441			mg/kg	0.0465		95	80-125	
<i>Surrogate: Toluene-d8</i>	0.0463			mg/kg	0.0465		100	80-120	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0446			mg/kg	0.0465		96	80-120	

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 Project Manager

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SECOR International, Inc.-Thousand Oaks  
290 Conejo Ridge Avenue, Suite 200  
Thousand Oaks, CA 91361  
Attention: Gareth Roberts

Project ID: ARCO 1076, Chatsworth  
Report Number: INJ2033

Sampled: 10/28/04  
Received: 10/28/04

## DATA QUALIFIERS AND DEFINITIONS

BZ	Sample preserved improperly
DU	Insufficient sample quantity for matrix spike/dup matrix spike
J,DX	EPA Flag - Estimated value, Value < lowest standard (MQL), but > than MDL
LH,AY	Due to sample matrix effects, the surrogate recovery was outside acceptance limits
LM,AY	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
LT	The RPD calculation does not provide useful information due to varying sample weights when Encore samplers are used
MB	Analyte present in the method blank
PC	Sample taken from VOA vial with air bubble > 6mm diameter
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

## ADDITIONAL COMMENTS

### For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD.

The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

### For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

## 8015 Analysis EDF Parlabel Cross Reference

Analyte	EDF
GRO (C4 - C12)	Parlabel GROC4C12

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Attention: Gareth Roberts

Project ID: ARCO 1076, Chatsworth  
Report Number: INJ2033

Sampled: 10/28/04  
Received: 10/28/04

## Certification Summary

Del Mar Analytical, Irvine

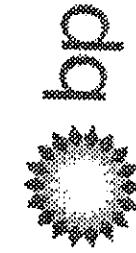
Method	Matrix	NELAP	CA
EPA 8015B	Soil	X	X
EPA 8015B	Water	X	X
EPA 8260B	Soil	X	X
EPA 8260B	Water	X	X

*NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

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Wendy Kirkeeng For Chris Roberts  
Project Manager

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# Chain of Custody Record

Project Name: Well Abandonment  
 BP BU/AR Region/Enviro Segment: Retail (Coastal + C. LA)  
 State or Lead Regulatory Agency: Los Angeles City Fire Dept.  
 Requested Due Date (mm/dd/yy):

Well Abandonment

Segment:

Retail

(Coastal + C. LA)

City:

Los Angeles

State:

CA

On-site Time:

Temp:

Off-site Time:

Temp:

Sky Conditions:

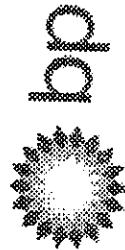
Cloudy

Meteorological Events:

Wind Speed:

Direction:

Lab Name:		Del Mar Analytical	BP/AR Facility No.:	ARCO 1076	Consultant/Contractor:	SECOR International Inc.
Address:		2852 Alton Avenue	BP/AR Facility Address:	9500 De Soto Avenue	Address:	290 Conejo Ridge Avenue, Ste 200
Site Lat/Lng:		California Global ID No.:	None		Consultant/Contractor Project No.:	37BP.01076.00
Lab PM:		Chris Roberts	Enfco Project No.:	G09K0-0080	Consultant/Contractor PM:	Gareth Roberts
Tel/Fax:		949-261-1022 / 1228	Provision or RCOP (circle one)	Provision	Tele/Fax:	805-230-1266/1277
BP/AR PM Contact:		Ray Yose	Phase/WBS:	06 Closure	Report Type & QC Level:	LARWQCB
Address:		4 Centerpointe Drive	Sub Phase/Task:	Analytical	E-mail EDD To:	bauchard@secor.com
Tel/Fax:		La Palma	Cost Element:	Subcontracted Costs	Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)	
Lab Bottle Order No:		Matrix	No. of Contaminants	Preservative	Requested Analysis	
Item No.	Sample Description	Date	Time	Laboratory No.	Water/Liquid	Sample Point Lat/Long and Comments
1	D-1	10/28/04	10:28	X	HCl	ENCL
2	EBRI-RC-2804-10-28	10/28/04	10:15	X	HNO <sub>3</sub>	100A
3	TB1076-2004-10-28	10/28/04	-	X	H <sub>2</sub> SO <sub>4</sub>	
4				X	Metabanol	
5				X	BTEX/Oxy/TPH	
6				X	BTEX 8021	
7				X	BTEX/Oxy/TPH	
8				X	EPA 8270	
9				X	EPA 8260	
10				X	44-12-21	
Sampler's Name:		Gareth Roberts		Relinquished By / Affiliation		Date
Sampler's Company:		SECOR		DMSI		Time
Shipment Date:		10/28/04		10/28/04		Date
Shipment Method:		Ground		Ground		Time
Shipment Tracking No:		JL127902011915		JL127902011915		
Special Instructions:						
Custody Seals In Place Yes		No		Temp Blank Yes		
Temp Blank N/A		Cooler Temperature on Receipt		39°F/C		
Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor		Trip Blank Yes		✓ No		
BP COC Rev. 4 10/1/04						



## Chain of Custody Record

Project Name: Well Abandonment  
 BP BU/AR Region/Envos Segment: Retail (Coastal + C. LA)  
 State or Lead Regulatory Agency: Los Angeles City Fire Dept.  
 Requested Due Date (mm/dd/yy): \_\_\_\_\_

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name:	BP/AR Facility No.:	ARCO 1076	Sample Point Lat/Long and Comments										
			Consultant/Contractor:	SECOR International, Inc.									
Address:	BP/AR Facility Address:	9500 De Soto Avenue	Address:	290 Conejo Ridge Avenue, Ste 200									
Site Lat/Long:	California Global ID No.:	None		Thousand Oaks, CA 91360									
Lab PM:	Envos Project No.:	G09KO-C080	Consultant/Contractor Project No.:	37BP/01076.00									
Tele/Fax:	Provision or RCOP (circle one)	Provision	Consultant/Contractor PM:	Gareth Roberts									
BP/AR PM Contact:	Phase/WBS:	06 Closure	Tele/Fax:	805-250-1266/1277									
Address:	Sub Phase/Task:	Analytical	Report Type & QC Level:	LARWQCB									
Tele/Fax:	Cost Element:	Subcontracted Costs	E-mail EDD To:	bauchard@secor.com									
Lab Bottle Order No.:	Matrix	Preservative	Requested Analysis										
Item No.	Sample Description	Laboratory No.	No. of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	Ultrapreserved	BTEX/TPH	BTEX/OxyTPH	BPA 8270	BPA 8260	G20 - G25	
	Date	At	Soil/Solid	Water/Liquid	Water/Liquid	Water/Liquid	Water/Liquid						
1	Dust 1	10/09/04	X	X				X	X	X			
2	EBI 0712-2504.10.28	10/10/04	X										
3	EBI 0714.2004.10.28	"	X										
4		-											
5													
6													
7													
8													
9													
10													
Sampler's Name:	Garrett Roberts	Retired/Left/Affiliation:	10/09/04	Accepted By / Affiliation:	10/09/04	Date	Time						
Sampler's Company:	SECOR												
Shipment Date:	10/09/04												
Shipment Method:													
Shipment Tracking No.:													
Special Instructions:													

Custody Seals In Place Yes  Temp Blank Yes  Cooler Temperature on Receipt  °F/C Trip Blank Yes  No  
 Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor